

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



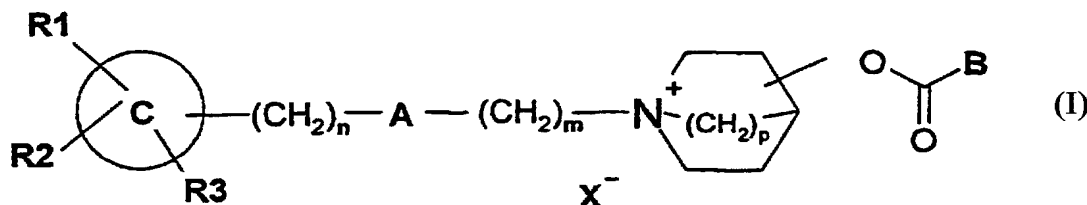
(43) International Publication Date
18 January 2001 (18.01.2001)

PCT

(10) International Publication Number
WO 01/04118 A3

- (51) International Patent Classification⁷: C07D 453/02, A61K 31/435, A61P 43/00
- (21) International Application Number: PCT/EP00/06469
- (22) International Filing Date: 7 July 2000 (07.07.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
P 9901580 14 July 1999 (14.07.1999) ES
- (71) Applicant (for all designated States except US): **ALMIRALL PRODESFARMA S.A.** [ES/ES]; General Mitre, 151, E-08022 Barcelona (ES).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **FERNANDEZ FORNER, Dolors** [ES/ES]; Roget de Flor, 221, 5^o-4^a, E-08025 Barcelona (ES). **PRAT QUINONES, Maria** [ES/ES]; Andrea Doria, 2, 1^o-1^a, E-08003 Barcelona (ES). **BUIL ALBERO, Maria Antonia** [ES/ES]; Calle Paris, 50, 1^o-4^a, E-08029 Barcelona (ES).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
19 July 2001
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUINUCLIDINE DERIVATIVES AND THEIR USE AS MUSCARINIC M3 RECEPTOR LIGANDS



(57) Abstract: A compound according to formula (I) wherein zC is a phenyl ring, a C₄ to C₉ heteroaromatic compound containing one or more heteroatoms, or a naphthalenyl, 5,6,7,8-tetrahydronaphthalenyl or biphenyl group; which shows high affinity for muscarinic M₃ receptors (Hm3).

WO 01/04118 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/06469

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D453/02 A61K31/435 A61P43/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 424 021 A (PFIZER LTD.) 24 April 1991 (1991-04-24) page 2; claim 1	1, 33
A	--- CHEMICAL ABSTRACTS, vol. 104, no. 19, 12 May 1986 (1986-05-12) Columbus, Ohio, US; abstract no. 168339g, GODOVIKOV, N. N. ET AL.: "Synthesis and muscarinolytic activity of quinuclidinyl benzilate alkyl iodides" XP002128290 abstract & KHIM.-FARM. ZH., vol. 19, no. 9, - 1985 pages 1060-1061, --- -/--	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

4 January 2001

Date of mailing of the international search report

30/01/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Van Bijlen, H

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 00/06469

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 012 964 A (SOCIÉTÉ GÉNÉRALE DE RECHERCHES & D'APPLICATIONS SCIENTIFIQUES) 27 March 1970 (1970-03-27) cited in the application claims -----	1, 33

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/06469

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 424021 A	24-04-1991	AT 102198 T	15-03-1994
		AU 616362 B	24-10-1991
		AU 6472690 A	25-07-1991
		CA 2027896 A	20-04-1991
		CN 1051041 A,B	01-05-1991
		DE 69007009 D	07-04-1994
		DE 69007009 T	09-06-1994
		HU 56365 A,B	28-08-1991
		JP 3133980 A	07-06-1991
		JP 6000780 B	05-01-1994
		KR 9304845 B	09-06-1993
		NO 174256 B	27-12-1993
		NZ 235750 A	26-03-1992
		PL 287365 A	03-06-1991
		PT 95610 A	13-09-1991
		RU 2005721 C	15-01-1994
		US 5171744 A	15-12-1992
		ZA 9008343 A	24-06-1992
FR 2012964 A	27-03-1970	AT 291272 B	15-06-1971
		BE 735031 A	01-12-1969
		CH 513174 A	30-09-1971
		DE 1935751 A	26-02-1970
		GB 1219606 A	20-01-1971
		NL 6910859 A,B	19-01-1970
		SE 361314 B	29-10-1973
		US 3714357 A	30-01-1973